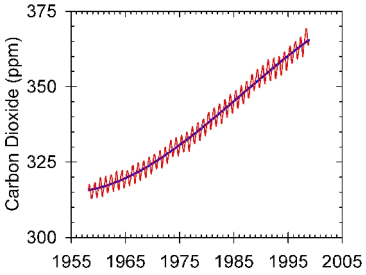
NOAA RESEARCH 2001

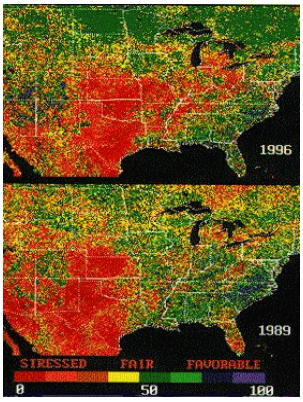
Climate Observations and Services



The long-term increase in global atmospheric CO_2 may be observed in the record from the Mauna Loa Observatory dating back to 1957.

NOAA requests $28.0 million in FY 2001 in a new line under the Office of Oceanic and Atmospheric Research (OAR)* Climate and Air Quality subactivity to develop the observation, data, and information systems necessary to forecast and assess climate variations over the continuum from weeks to centuries. Improved climate predictions will enable resource managers in climate sensitive sectors such as agriculture, water management, and energy supply to alter strategies and reduce economic vulnerability. Building on the understanding of the Earth's climate system that has resulted from the nation's strong scientific research and numerical modeling programs, this Climate Observations and Services Program will begin the transition of research data, observing systems and understanding from experiments to applications, and from basic science to practical products. Management of this initiative is designed so that as funding needs shift from installation costs to collection, analysis, and distribution of the data, and as climate products and services are transformed from developmental to operational status, the program maintains the flexibility to move its resources to where they will be most effective.

Environmental monitoring and observations are needed to determine the conditions in the oceans and atmosphere which govern the Earth's climate. The observational components of the program will (1) begin the deployment of a Climate Reference Network to precisely monitor fundamental variables such as temperature and precipitation across the United States; (2) implement critical upgrades and enhanced measurement programs at NOAA's atmospheric baseline observatories; and (3) establish a global oceanographic observational network to provide data critical for models of seasonal climate variations such as El Niño and models of long-term climate variations. The fourth component of the program is Climate Data and Information Access. This will improve the incorporation of observational data into climate forecast models; develop a broad spectrum of new climate forecast products; develop new storage technologies to improve and maintain public and research access to large volume ground- and space-based data sets; routinely update, ensure access, and produce critical information about these data sets; implement a program to ensure the integrity and continuity of old and new observational data over time; and develop tools for Weather and River Forecast Offices to use to determine how climate variations will affect the location, frequency, and intensity of extreme weather events such as heavy snows and tornados.



These images compare late-April vegetation conditions from 1996 (top) and 1989 (bottom). Red denotes a stressed condition due to drought.

Research efforts have identified the types of information and technologies required to measure climate variability and change, identify causes of variability, evaluate the consequences of variability and predict future climate states. The benefits of basic climate research are now ready to be utilized in an applied research program, the next step towards operational forecasts. Through this initiative, NOAA will be better able to serve the needs of its customers in industry, the general public, and the Government with more accurate data, information, and knowledge regarding potential changes in climate, seasons of unusual weather, as well as the trends and expectations for future climate and weather events. This initiative provides the quality of data needed to translate climate research understanding into operational climate services whose potential benefits extend well into billions of dollars of economic value.

*Although the Climate Observations and Services line is found within the OAR budget activities, the program will be jointly managed by NOAA's OAR, National Environmental Satellite, Data and Information Service (NESDIS) and National Weather Service (NWS).

For more information, please contact Andrew Larkin in NOAA's Office of Legislative Affairs at 202-482-4630.